**Scrum Team Roles and Responsibilities: COSMOS Project**

This document outlines the key roles and responsibilities within the Scrum framework for the "COSMOS — Coordinated Orbital System Management and Operations Suite" project. Understanding these roles is crucial for effective collaboration, communication, and successful project delivery.

**1. Product Owner**

The Product Owner (PO) is the voice of the customer and stakeholders, responsible for maximizing the value of the product resulting from the work of the Development Team.

For the COSMOS Project, the Product Owner is **Krithin Thota**. He is accountable for:

**Key Responsibilities:**

* **Defining and Communicating Product Vision and Goals:**
  + Clearly articulating the overall vision for the COSMOS Project (e.g., "To create a comprehensive suite for managing and operating coordinated orbital systems, leveraging AI and Big Data to provide real-time anomaly detection, secure communication, and optimized operational responses.").
  + Defining clear, measurable project goals and success criteria.
* **Managing and Prioritizing the Product Backlog:**
  + Creating, maintaining, and clearly describing Product Backlog Items (User Stories like COS-1 to COS-54+, features, improvements, bug fixes from Jira).
  + Ordering Product Backlog Items to best achieve goals and mission.
  + Ensuring the Product Backlog is visible, transparent, and clear to all.
  + Making sure the Development Team understands items in the Product Backlog to the level needed.
* **Stakeholder Management:**
  + Representing the interests of all stakeholders (e.g., system operators, security analysts, data scientists, internal assessors like Dr. S Santhanalakshmi).
  + Gathering requirements and feedback from stakeholders.
  + Keeping stakeholders informed about project progress and changes.
* **Sprint Planning Participation:**
  + Presenting the highest priority Product Backlog Items to the Development Team.
  + Clarifying the scope and acceptance criteria for selected items.
  + Collaborating with the Development Team to define the Sprint Goal.
* **Sprint Review Participation:**
  + Reviewing and accepting or rejecting work completed during the Sprint.
  + Providing feedback on the increment and making decisions about future work.
  + Collaborating with stakeholders and the Scrum Team to inspect the increment and adapt the Product Backlog.
* **Decision Making:**
  + Making timely decisions regarding COSMOS features, scope, and priority.
  + Being the final arbiter of what features make it into the COSMOS suite.
* **Release Management (in collaboration with the team):**
  + Deciding when to release increments of the COSMOS suite.
  + Ensuring the product meets the desired quality and functionality.

For the COSMOS Project, the Product Owner specifically focuses on:

* Ensuring features like "Central LLM task management," "CV LLM anomaly detection," "CS LLM secure communication," and "Big Data analytics" deliver tangible value.
* Prioritizing development based on risk and operational impact.
* Defining what constitutes "effective," "secure," or "optimized" from an operational perspective.

**2. Scrum Master**

The Scrum Master is a servant-leader for the Scrum Team, responsible for promoting and supporting Scrum.

For the COSMOS Project, **Pasupuleti Jaswanth** is also acting as the Scrum Master (as per team1\_SEreport.docx). He additionally takes on Computer Security (CS LLM) focus as a developer.

**Key Responsibilities:**

* **Facilitating Scrum Events:**
  + Ensuring Sprint Planning, Daily Scrums, Sprint Reviews, and Sprint Retrospectives are effective.
* **Removing Impediments:**
  + Identifying and helping to remove blockers for the Development Team (e.g., issues noted in Daily Scrum sheets).
  + Shielding the team from external interruptions.
* **Coaching the Scrum Team:**
  + Coaching the Development Team in self-organization and cross-functionality.
  + Helping the Development Team create high-value COSMOS increments.
  + Coaching himself (as Product Owner) in effective Product Backlog management.
* **Promoting Scrum Practices and Values:**
  + Ensuring adherence to Scrum principles and values.
  + Helping the team improve its Scrum implementation.
* **Facilitating Communication and Collaboration:**
  + Ensuring effective communication within the Scrum Team and with stakeholders.
* **Supporting the Product Owner:** (Supporting his own PO functions)
  + Utilizing techniques for effective Product Backlog management.
  + Ensuring clear Product Backlog items.
  + Arranging the Product Backlog to maximize value.
* **Supporting the Development Team:**
  + Helping the Development Team become self-organizing.
  + Facilitating a productive environment.

For the COSMOS Project, the Scrum Master (Pasupuleti Jaswanth) specifically focuses on:

* Ensuring Daily Scrums are effective for coordinating development tasks.
* Helping the team navigate technical challenges in integrating complex COSMOS components.
* Ensuring sprint goals are realistic and achievable.

**3. Development Team**

The Development Team consists of professionals who do the work of delivering a potentially releasable Increment of "Done" product at the end of each Sprint.

For the COSMOS Project, the Development Team members are **Krithin Thota, Dhanush Dayanand, and Vangapandu Baladitya.** Pasupuleti Jaswanth also contributes to development tasks, particularly in Computer Security.

**Key Responsibilities:**

* **Delivering a "Done" Increment:**
  + Performing all tasks (design, coding, testing, integration) to build shippable COSMOS increments each Sprint.
* **Sprint Planning Participation:**
  + Collaborating with the Product Owner to select Product Backlog Items.
  + Creating the Sprint Backlog.
  + Estimating effort for Product Backlog Items.
* **Self-Organization:**
  + Organizing and managing their own work to meet the Sprint Goal.
* **Daily Scrum Participation:**
  + Actively participating in Daily Scrums, sharing progress and impediments.
* **Maintaining Quality:**
  + Ensuring work quality through practices like code reviews, testing, and adherence to standards.
* **Cross-Functionality:**
  + Possessing all skills as a team necessary for the COSMOS product. Accountability belongs to the Development Team as a whole.
* **Adaptation and Continuous Improvement:**
  + Inspecting and adapting processes during Sprint Retrospectives.
* **Collaboration:**
  + Collaborating closely with each other, the Product Owner, and the Scrum Master.
* **Task Management:**
  + Breaking down Product Backlog Items into tasks and tracking progress.

For the COSMOS Project, the Development Team (Krithin Thota, Dhanush Dayanand, Vangapandu Baladitya, with Pasupuleti Jaswanth contributing to CS LLM) specifically focuses on:

* **Krithin Thota (Head Developer, PO and Central LLM & Big Data Focus):**
  + Designing, developing, and optimizing the **Central LLM** (e.g., COS-23, COS-24, COS-25, COS-26, COS-33).
  + Managing overall system architecture integration related to the Central LLM and its decision-making processes.
  + Designing and implementing Big Data architecture (e.g., COS-37, COS-38, COS-40, COS-41, COS-42).
  + Developing data pipelines (e.g., COS-49, COS-45), Kafka/Spark streaming for CV anomaly data (COS-44).
  + Integrating real-time event triggers for Central LLM task updates (COS-48).
  + Setting up logging and monitoring tools (COS-54).
* **Dhanush Dayanand (Vision Developer / CV LLM & Weather Prediction Focus):**
  + Gathering datasets and selecting models for the **Computer Vision (CV) LLM**, with a specific focus on **weather prediction** and other visual anomalies (e.g., COS-6, COS-10).
  + Implementing the CV LLM for weather prediction and relevant visual detections (e.g., COS-15).
  + Developing severity scoring and prompt conversion for CV data related to weather and other visual inputs (e.g., COS-17, COS-18).
  + Stress-testing the CV LLM (e.g., COS-31).
* **Vangapandu Baladitya (Security Developer / Data Analytics & Debris Detection Focus):**
  + Developing and implementing **data analytics modules**, potentially using historical anomaly trends (e.g., COS-50, supported by Krithin on pipeline side).
  + Focusing on **debris detection** aspects, potentially involving specific model training or data analysis distinct from weather (e.g., parts of COS-16 training, or if specific debris detection tasks are assigned from unassigned pool).
  + Optimizing data aggregation, compression, and retrieval for anomaly records, including debris data (e.g., COS-46).
  + Contributing to testing Big Data streaming performance, especially for debris and anomaly data (e.g., aspects of COS-52).
  + May contribute to UI/Dashboard definition for displaying analytics and debris detection information (e.g., parts of COS-47).
* **Pasupuleti Jaswanth (Scrum Master, Computer Security / CS LLM Focus):**
  + Defining and implementing data encryption methods for the **Computer Security (CS) LLM**, including Quantum Security Framework aspects (e.g., COS-7, COS-19, COS-20).
  + Establishing message integrity verification (e.g., COS-21).
  + Converting task updates to prompts from a security perspective for the Central LLM (e.g., COS-22).
  + Finalizing and applying encryption methods for secure task transmission across the system (e.g., COS-11).
  + Evaluating CS LLM latency under encrypted messaging (e.g., COS-32).
* **Collectively:** Designing the overall COSMOS system architecture, implementing and integrating the core CV, CS, and Central LLMs, managing Big Data flows, ensuring security, writing unit and integration tests, and ensuring the application is functional and meets the requirements defined in the User Stories and Definition of Done for managing orbital systems.